Transcript

00:00:06 Speaker 1

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

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No one agrees if it's safer or not, so you might as well smoke anyway.

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Now what your mate needs is a Cochrane review.

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All the facts have been checked at least twice.

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Hi, I'm Nicola Linson.

00:00:38 Speaker 2

And I'm Jamie Hartman-Boyce.

00:00:39 Speaker 2

We're both researchers based at the University of Oxford, where we work with the Cochrane Tobacco Addiction Group.

00:00:45 Speaker 3

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 literature to find new studies.

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We then use these studies to update our Cochrane Systematic Review of e-cigarettes for smoking cessation.

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This is called a living systematic review.

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In each episode of this podcast, 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.

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So for this month's In a Nutshell, we ran our searches on the 4th of May and discovered 4 new ongoing studies which may be relevant for the review when completed.

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This month, we didn't find any new completed studies.

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One of the ongoing studies we found in an earlier search this year was a UK study conducted in pregnant women, Helping Pregnant Smokers Quit, a multi-center randomized controlled trial of electronic cigarettes and nicotine patches.

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We were interested in learning more about e-cigarette research as it pertained to pregnant women, so I interviewed one of the investigators, Professor Tim Coleman from the University of Nottingham, in this month's Deep Dive.

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So first of all, can you tell me a bit about yourself and what got you into doing research on e-cigarettes?

00:02:04 Speaker 4

Hi, my name's Tim Coleman, and I'm a GP.

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I work one day a week as a GP, and I've been doing research into smoking for about 28 years now.

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And in the, sort of about 10 years ago now, published a trial, a large trial of nicotine replacement therapy used in pregnancy for pregnant women.

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to stop smoking.

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And on the back of that, a brilliant researcher called Peter Hayek approached me in about 2015 and said, would the people I work with in Nottingham and myself like to work with him to recruit women to a trial of e-cigarettes in pregnancy, which we agreed to.

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And the trial really is very much Peter Hayek's baby.

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Fantastic.

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And so that was back in 2015, you said that Peter first approached you about that.

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Where are you up to now?

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Yeah, I think it was 2015.

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So I've not actually talked to anyone from the team.

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I'm speaking very much in a personal capacity.

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So I do need to stress that Peter led the funding bid and actually he's the real leader of the study.

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What happened with the trial was that Nottingham ran recruitment and worked very much in conjunction with colleagues from Queen Mary in London, which is where Peter's from.

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And we recruited to target within the necessary sort of time, you know, allocated time for that.

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All the follow-up was done by the colleagues in London, and follow-up was completed on 24th September 2020.

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So, you know, we're pretty much on track.

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I think there's been some delay with COVID, but the analysis should happen sometime later this year.

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There's been something like 90% ascertainment of smoking cessation data at delivery.

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That's a mixture of research, collected data, and also something called SATOD, Smoking Status at Delivery data, which is a routine source of data.

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Fantastic.

00:03:54 Speaker 2

So in your study, am I right that what you're doing is you're comparing nicotine containing e-cigarettes to nicotine patches, is that right?

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Yes.

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So the trial design is such that it assumes usual treatment is behavioural support plus nicotine replacement therapy.

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And the comparison is with behavioural support and e-cigarettes.

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And were there any challenges kind of getting that

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past the post, as it were, in terms of either concerns from funders around the use of e-cigarettes in pregnant women, concerns from health care providers, concerns from the women themselves.

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Not particularly.

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It got funded by the NIHR Health Technology Assessment Programme at the first pass.

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Obscure science term definition.

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The NIHR is the British government's funder of health research, much like the NIH in the USA.

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The Health Technology Assessment Programme, otherwise known as the HTA, is one of the NIHR's funding streams.

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And the issue with e-cigarettes is that they provide nicotine, and there is also nicotine in cigarettes, and that they provide small traces of some of the other toxins in tobacco smoke, but in much lower doses than is contained in cigarettes.

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So the ethical case for using them is made on the basis that

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You know, you could predict that this should be a lot safer than smoking in pregnancy.

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You wouldn't recommend e-cigarettes for nicotine naive pregnant women, or for anybody who's not smoked before, but the ethical case wasn't hard to make.

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And I don't remember any problems with getting the study up and running, which were ethical ones.

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That's fantastic.

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That's really interesting to hear.

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As part of this podcast, we talk to people from all over the world, and I think the British context might be quite different than elsewhere in terms of getting those things up and running.

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And so I suppose one of the questions I had was thinking about it.

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Are there any specific considerations around

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quitting smoking in pregnancy.

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Of course, we know it's really important, but does nicotine work differently in pregnancy?

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Do patches work different in pregnancy?

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Is there any reason to think nicotine containing e-cigarettes might?

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That's a good question.

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So there's a lot less evidence out there on the efficacy of nicotine replacement therapy in pregnancy than there is in non-pregnant smokers.

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There's fewer trials, but the point estimate from those trials.

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A point estimate is a single value coming out of a study which can serve as a best guess or a best estimate.

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So in this case, a lower point estimate may indicate that although NRT seems to be effective in pregnant people, it may be less effective than in non-pregnant people.

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But the point estimate from those trials is lower than the point estimate from trials conducted in non-pregnancy workers.

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And usually when you're starting to assess the efficacy of the technology, you get higher point estimates.

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So that suggests to me that ultimately, you know, if we have the same amount of evidence, you're probably going to find that NRT in pregnancy is less effective than outside.

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So why should that be?

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I think there's two really good reasons.

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One is that nicotine metabolism is a lot faster in pregnancy.

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So at any given dose of patch, when a woman is pregnant,

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that nicotine patch generates a lower concentration of nicotine in her body and it has less ability to fight off cravings and it's more likely to fail.

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So that's one reason.

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And another reason from a large number of qualitative studies, you can see that pregnant women are really, really worried about using nicotine.

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And because of that, they use NRT in quite idiosyncratic ways.

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You know, they might actually

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you know, take a patch off during the day when they have a cigarette, that kind of thing.

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And the sort of fear of nicotine doesn't seem to extend to cigarettes, which they're a lot more familiar with.

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And so I think, you know, increased nicotine metabolism and less adherence, less strong adherence to nicotine patches are two really crucial reasons why NRT probably isn't as effective for pregnant women as it is when they're not pregnant.

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So how does this new study build on your previous work into helping pregnant women quit smoking?

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Is there anything you've learned from previous studies that you then incorporated in this one?

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Well, I suppose the key thing that's been incorporated in this study, which has come from previous work, is the lack of a placebo group and the comparison with routine care.

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So some people have said to me, oh, that trial's not going to prove anything because you haven't got a placebo group.

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And I can see where they're coming from, but the HTA is a funder which looks at whether technology works in the real world.

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There is systematic review evidence that NRT does have an effect in pregnancy, and that effect is seen when it's delivered with behavioural support.

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So, you know, I think

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The previous research has very much informed the trial design in that way.

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Yeah, absolutely.

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And I think that's an interesting part.

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In our Cochrane review of e-cigarettes for smoking cessation, actually, our main comparison, the first one, the one we draw the most attention to, is comparing nicotine.

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e-cigarettes to nicotine replacement therapy for exactly that reason.

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You know, we don't want to know if they work better than nothing.

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We want to know if they work better than what most people might be trying to use in these contexts.

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Great.

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So I suppose another question, which might be linked to what we've spoken about before, but what would you say your most interesting findings have been from your studies about smoking in pregnancy?

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Did anything come out of it that you didn't expect?

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Well, it would be interesting at some stage in my future career to do a trial with a positive

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That'd be nice, but that's never happened yet.

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And I think the most interesting finding for me has come from the qualitative work that shows really how suspicious a lot of pregnant women are of using nicotine and how that influences the way they make use of NRT.

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And what that's really brought home to me is that

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You know, when you're talking about offering a treatment of any kind to a patient or a trial participant, you've got to really consider very carefully what that offer looks like to them from their perspective.

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And if you don't know their perspective, you really haven't got much of a chance of much confidence of being able to get them to use the treatment how you want them to.

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And how do you think

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I think that's a really important issue with nicotine, not just in pregnancy, but across the board, actually, when we talk to people.

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How do we improve that?

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How do we as researchers, as scientists, or you as a clinician, help have those discussions in a way that does make it more clear?

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Is there anything that you think we could be doing?

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better?

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Or do we just need to do more research to find out what we could do better?

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I think it's really useful to have high quality research defining the benefits and harms of using nicotine for therapeutic purposes.

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So for example, systematic reviews which look at safety as well as efficacy.

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And one of the things that we've done in Nottingham in the last few years is a systematic review which looks at the dose of nicotine

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pregnant women receive from NRT compared to from smoking.

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So it's a systematic review that used within participant comparisons.

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Longitudinal data from within individual participants was aggregated.

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In other words, in the review Tim's talking about, they combined data from lots of pregnant people and they collected this data across different studies.

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Within each pregnant person, they had measures of the amount of nicotine in their system when they were smoking, and they compared this to the amount of nicotine in their system when they were using NRT.

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And that showed pretty unequivocally that there's a large, if you use NRT, there's a much lower dose of cotinine or nicotine than comes from cigarettes.

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Cotinine is produced when nicotine is broken down by the body.

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It is commonly used to measure how much nicotine people have been exposed to.

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So it might be too early to say, because I know you don't have results from this study yet, but what contribution, if any, do you think e-cigarettes might have to the field of smoking cessation in pregnancy?

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That's really interesting.

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I mean, you know, e-cigarettes are probably the only stop smoking, smoking cessation medication.

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that the public goes out and buys in large amounts.

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It's just never happened before.

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And one of my colleagues, Kate Bowker, working with Sue Cooper, has done a survey looking at how, you know, the prevalence of use of e-cigarettes in pregnancy.

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And something like three to four percent of pregnant women are using, admit to using e-cigarettes, usually alongside smoking in pregnancy.

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So my, my feeling is that if

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there's good quality evidence that you can use e-cigarettes when you're pregnant to kick the habit and stop smoking.

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That's going to really increase that number, I would have thought.

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And, you know, obviously women will want reassurance that it's safe as well.

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And if there's better evidence on safety comes forward from the trials as well, that can only contribute to that as well.

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So I think it's likely that more women will use them once the evidence is out there.

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So, it's likely to have quite a big impact.

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Yeah, that's excellent.

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And I hope we see more studies too in this area.

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It's so important.

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And actually linked to that, following on from this research, what research do you think could be done next or should be done next?

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If you could kind of pick any study and funding was guaranteed, what would be your next ave?

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Oh, very good question.

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You know, we've all got our own questions.

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I do think, though, that one swallow doesn't make a spring.

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And

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We do need, you know, if this trial has positive findings, and I don't know whether it does or it doesn't, but if it does have positive findings, I think it would be important to replicate those findings in at least one or two other trials.

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Ultimately, though, it would be interesting to see whether the effect of e-cigarettes, if there is one, whether that's independent of the associated, of the accompanying behavioural support that might be given.

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So it would be useful to see, you know, can they be effective if women just buy them from a shop, you know, or they're just given out for free without health professional support.

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Because if it was, if they were, you can see that in high income countries where the money is available to provide them freely, there could be quite a big impact.

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Absolutely.

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Okay, and that brings me on to my final question, which is what would you tell a pregnant person now about e-cigarettes if someone was asking you?

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Right, well, I mean, it would depend whether they were currently smoking or not.

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And if they had never smoked, I wouldn't raise the topic unless they did.

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And if they did, I'd say, well, you know, these do contain toxins which could harm your baby, please don't try them, you know.

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But if there was somebody who was a smoker or had recently stopped, well, let's say if they were a smoker, I'd be advising them to stop smoking.

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I'd be advising them to try and get behavioural support if it was available locally.

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And if they couldn't start with behavioural support alone, then using a pharmacological option like nicotine replacement therapy.

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But we know that a lot of people that you meet clinically have tried that already and they don't feel they can stop using those methods or they've tried and failed.

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So to someone who tried and failed who was saying, What about e-cigarettes?

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I'd be saying, Well, you're a smoker already, so you're already exposing yourself to large amounts of nicotine and more importantly, there are many toxins in tobacco smoke.

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E-cigarettes contain mainly nicotine and trace amounts of other things that's in cigarette smoke.

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I would advise you it's a lot safer to use them than smoking.

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And if you can use them to stop smoking altogether, if that happens for you,

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We know evidence it would do, but if it could happen for you, that would be one of the best things you could do for your future health and your baby's future health.

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Brilliant, thank you.

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That was really interesting, Jamie.

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Thank you for speaking to Professor Coleman.

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You're very welcome.

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One of the things that jumped out at me was this issue of nicotine metabolism and how it seems to differ in different groups of people.

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We discussed this in episode 2, which was the episode of the podcast which came out in January, as there appears to be emerging evidence that the rate at which nicotine is used by the body may differ in different ethnic groups as well.

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It's a really important area for research and I think it probably has important implications for what the ideal level of nicotine content might be in e-cigarettes for people using them to quit and how that might vary person to person.

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It would be really great to see more research on that in the future.

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I'm guessing that one of the things that they may look at in this new study is the levels of nicotine participants were consuming before switching to e-cigarettes versus what they consumed after switching to see if e-cigarettes compensate for that better than NRT.

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That would be really interesting and I'll definitely be looking out for those findings.

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Absolutely.

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I think it's fair to say we can't wait to see this study and include it in our review when the time comes.

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So that's it from us this month.

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Thank you all so much for listening and to Professor Coleman for the fascinating interview.

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

00:17:39 Speaker 1

But remember to mention the findings we have, can't tell us what'll happen long term.

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Even though we know vaping is safer than smoking, we may still find cause for concern.

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If you're thinking of switching to vaping, do it! That's what the experts agree.

00:17:59 Speaker 1

Smoking's so bad for you, they all concur that vaping's burning, but there's much to learn of effects on time yet to be seen.

00:18:08 Speaker 2

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

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Music is written with Johnny Berliner

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and performed by Johnny.

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The views expressed in this podcast are those of Nicola and I and do not represent those of the funders.