



E-Cigarettes and Vaping- What you need to know

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SPEAKERS

Tara Guckel, Hayden McRobbie

- T** Tara Guckel 32:12
Good afternoon, everyone, and welcome to the Positive Choices webinar series. My name is Tara Guckel. And I am the project manager for Positive Choices. And I'm based at the Matilda Centre for Research in Mental Health and Substance Use at the University of Sydney. Welcome, and thank you to our audience for joining us today.
- T** Tara Guckel 32:32
We all coming together from different parts of the country today. So I'd like to begin by acknowledging the traditional custodians of country throughout Australia, and their connection to land, water and community. I'm currently in the land of the Gadigal people of the Eora nation, and I pay respects to their elders past and present. I further acknowledge the traditional owners of the land on which you are on and pay my respects to their elders past and present. I'd also like to acknowledge any Aboriginal and Torres Strait Islander people joining us for the webinar today.
- T** Tara Guckel 33:04
Before we get into today's presentation, I'll just go through a few housekeeping points. As participants, you are currently on listen only mode, which means that we will not be able

to hear or see. And we are recording this session and it will be made available via the Positive Choices website along with the slide handouts. We're going to have a question and answer session towards the end of the webinar. So please feel free to add your questions to the Q&A box and you should be able to see that one on your screen.

T Tara Guckel 33:33

And if you're new to Positive Choices, let me just give you a quick introduction. Positive Choices is a website that aims to provide evidence based alcohol and other drug information that is up to date and accurate. We have resources suitable for parents, teachers and students. And I would encourage you to visit our website to access a range of evidence based resources and our webinars are part of this. And you can also access recordings of our past webinars via the website.

T Tara Guckel 34:00

Now today's webinar is on E cigarettes and vaping and will be presented by Professor Hayden McRobbie. Professor Hayden McRobbie is a health behavior change expert with a special interest in tobacco and obesity. Hayden graduated with his degree in medicine and surgery from the University of Ontego. And after working in general medicine and surgery for three years, he moved to the UK to work in tobacco dependence research unit. While working in this unit, he completed his PhD in medical psychology, which focused on tobacco withdrawal symptomology. Hayden is an experienced researcher and one of his main areas of research is the treatment of tobacco dependence, and with a current focus on electronic cigarettes, and digital strategies. He is a professor at the National Drug and Alcohol Research Unit at the University of New South Wales, and a consultant in lifestyle medicine at lakes District Health Board in New Zealand. So thank you very much Hayden, for joining us today. And we're very lucky to have you ,I'll now passover to Hayden.

T Tara Guckel 34:58

Thank you very much for that kind introduction, and welcome to everyone on online, but we're all getting used to these online events more now. So hopefully, that all looks good. And you can see the first slide there on electronic cigarettes. And what you need to know. Now I'm going to preface this by saying I'm sorry if there's, there's some technical bits as we go through. I will try my best to explain everything in a little bit of detail. So it's not so confusing. But my apologies in advance if there's something that's just all gobbly gook.

H Hayden McRobbie 35:37

So let's first off start by just having a quick refresher on what electronic cigarettes, e cigarettes or vaping devices, this is all the same, multiple multitude of terminology used to describe the same product essentially. And these are all battery operated products, they heat an aerosolize or vaporize if you like a liquid that usually contains a mix of propylene glycol, vegetable glycerin, some sort of flavoring, and very often the case nicotine, but not all electronic cigarettes contain nicotine. And their concentration varies, which I'll talk about in a minute. And when I first started getting involved in electronic cigarettes, most were of this were first generation or cigar like type devices. But then over time, the technologies continued to evolve. And now we've got these fourth generation or pod type devices, which are possibly the most popular among young people. quite cool looking, they're light, very easy to use and can use discreetly as well.

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Hayden McRobbie 36:52

Now in terms of nicotine, just a quick refresher. Remember that nicotine is contained in the tobacco leaf, there is a nicotine salt. When you smoke tobacco leaf, dried tobacco leaf, it's often mixed with ammonia to increase the alkalinity which means more nicotine can be absorbed or it's better absorbed. And nicotine is very quickly absorbed from tobacco smoke and reaches a part of the brain. Again quickly, that's involved in rewarding behavior. It's the mesolimbic dopaminergic pathway, you don't need to remember that but know that taking a puff on a cigarette delivers nicotine, and that rewards the behavior of smoking. And so you can imagine smoking over years and years multiple numbers of puffs per day. It's a very highly entrenched behavior. Now, nicotine is not the harmful stuff for smokers people smoke for the nicotine as the saying goes, but die from the tar. It's the burning of organic material that causes most of the harm as opposed to nicotine. But the nicotine is what dependent or addicted to nicotine delivery, as I mentioned from a cigarette is very quick.

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Hayden McRobbie 38:16

And you might ask for how well do e cigarettes deliver nicotine? Well, they deliver nicotine much more like a cigarette than any of the nicotine replacement products that we use to help people stop smoking, such as the patch or the gum or the or the lozenge. Now, this graph here and I'll show you another one soon, is showing nicotine delivery from either cigarettes shown in this light blue line here, or a range of different e cigarette products containing nicotine, each different color line is a different product. But what you can see I hope from this graph is that all of these e cigarette products deliver nicotine and peak within within 10 minutes or so very similar to a cigarette now. That's great if you're using them to help people stop smoking but more risky if they're in the hands of people that don't smoke because of the potential for becoming addicted to these products.

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Hayden McRobbie 39:23

And I just want to mention JUUL at this point. Some of you may have heard about this device. It has created quite a stir in the US. And this is an electronic nicotine delivery system that delivers nicotine very well. And here's some data here again, this is blood nicotine delivery over time. The solid line is nicotine delivery from a cigarette and the dotted line is nicotine delivery from a JUUL device one of these e-cigarettes in the hands of you know experienced vapers and what you're seeing here if you know how to use this device, you can get nicotine levels very, very similar to smoking. Again, great if you're a smoker trying to switch and stop smoking, but not good if you're going to pick this up and persist with it, and the possibility is that it could become addictive.

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Hayden McRobbie 40:23

Now there's some controversy, as you're all aware of at this field. And so I just want to first off just looking at some trends and East cigarette use in Australia.

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Hayden McRobbie 40:33

And this data from the National Drug strategy household survey 2019. So already a little bit out of date, but I hope it will show you some of the trends we're seeing.

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Hayden McRobbie 40:44

First off some good news. Smoking prevalence in Australia continues to decline. Now Australia's got some of the best tobacco control policies in the world was world leading in many aspects of tobacco control. And so you're seeing this ongoing decline in smoking prevalence, and an increase actually of never smokers as well, which is good to see.

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Hayden McRobbie 41:11

We've also seen that e-cigarette use has increased over time, and these are just two time points 2016 2019, it would be nice to have some more recent data. And what you're seeing here is current use, and current use is defined as daily use weekly use at least monthly use or less than monthly use. So you know, if you had a path, once a month, or something like that, you'd be counted as current people that used to use them, but no longer do use them only once or twice and never use them. And you can see here there's a decrease of never use an increase in every use. And that's that's typical, and it's happening in many other countries.

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Hayden McRobbie 42:00

In terms of who's using them, I think the good news here is, at this time points, the vast majority of never smokers have never used an e cigarette that's that's still shown here. Okay. Most use is happening in people who smoke, which I which I think is is reassuring. But among young people, we're also starting to see this increase, again, mostly in smokers. So this is 15 to 24 year old people, young people who smoke, and you can see the increase in the use of E cigarettes between these two time points is your older age group. And then here are the non smokers. So we are seeing an increase in current use in non smokers as well. still fairly small in terms of overall percentage. But the question is now why non smokers using vaping products, and we'll come to this later on.

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Hayden McRobbie 43:04

Similar story here in New Zealand. This is the year 10 survey. So this is vaping and smoking in 14 and 15 year olds. And you can see here over time, ever use of an e cigarette has gone up. So in 2019, it was 37.3% of 14 and 15 year olds, with a still a decline and ever tried a cigarette daily use of E cigarettes is still quite low, but higher than daily smoking. Again, the most worrying scenario of this would be daily vaping and never smokers. So people who have never smoked, that are now vaping or using an e cigarette on a daily basis at this time point in 2019. That was under 1%, which is quite similar to that that we might see in the in the UK, but but not completely negligible.

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Hayden McRobbie 44:10

Now you won't be surprised by this. But when you ask people why they use e cigarettes, most of them are out of curiosity. And that's especially true for never smoker, they just try them because well, why not? And then the next biggest categories here are to try and help you quit smoking. And that's primarily as you'd expect and people that currently smoke or are ex smokers.

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Hayden McRobbie 44:36

Now, the whole Well, perhaps part of the controversy in all of this is that there's sort of two sides of the story. Could e cigarettes help people stop smoking with that that would be a good thing. And we'd all like to see more people who smoke quit and so vaping might be a way out of smoking. But we have to balance that with preventing uptake of vaping. And people who don't smoke. And so you'll often hear two different sides of the story, depending on where people are coming from. If you're like me and work with a lot of people who smoke, then obviously, I'd like them to do whatever they can to not smoke. If

you're in a school based setting where people don't typically smoke, then no e cigarettes are not necessarily a good thing.

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Hayden McRobbie 45:28

So just to answer the question, I do e cigarettes help people stop smoking. We have a review a paper that systematic review that's updated on a regular basis. So we really work hard to try and keep this up to date.

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Hayden McRobbie 45:44

And overall, I'll just give you the headline results is that yes, e cigarettes can help people stop smoking, but they're no magic cure. So for example, out of every 100 people that try using an e cigarette to help them stop smoking around 10 to 11, will stop smoking long term. Now that's a little bit better than using patches of gum or lozenges, or those nicotine replacement products. But again, no magic cure. But answering that question. Yes, e cigarettes can help people quit.

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Hayden McRobbie 46:19

In terms of their side effects. There are some common side effects associated with vaping. Mostly local throat and mouth irritation. Cough, some people feel a little bit sick, and some people get headaches. But most of these studies, we haven't seen any serious adverse events and people using nicotine containing e cigarettes in these studies.

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Hayden McRobbie 46:47

So are e-cigarettes safe. I try not to use the word safe here. I prefer to say you know, well, no, they're not 100% safe. But overall, they're less harmful than smoking. So if you're a smoker, obviously switching to vaping would be less harmful.

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Tara Guckel 47:06

But there are substances in e cigarette products, products that are potentially harmful. And for example, when you're heating the liquid that is used in these devices, if you heat it to high enough temperatures, you can form things like formaldehyde, or Acetaldehyde, which can be carcinogenic there. Because the batteries in the coils are made of metal, you can get exposure to metal and other products like lead and tin and silicates. And then you've got the components of the liquid, which can include nicotine. And you can get nicotine poisoning, of course, if you took too much nicotine, but I think some of the

perhaps substances we'll find to be most problematic will be the flavoring. And we already have an idea with some of the flavors such as the one that gives you cherry flavor as benzaldehyde cinnamon flavors which have a cinnamaldehyde irritant to the lining of our respiratory system. So those particular flavors, certainly not so good. And who knows over time might be found to cause some harm.

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Hayden McRobbie 48:26

Also, adding some substances to vaping products can be very harmful. And we saw this in the US in 2019. Some of you may have heard of EVALI, this was the e cigarette or vaping product use associated lung injury. And in the US, and it was combined to the US, there were almost 3000 cases of quite severe lung injury associated with e cigarette use. Now later on, they discovered that this was found to be related to vitamin E acetate. And this substance was had been used as an additive, most notably and THC containing e cigarette or vaping products. So it was being added to, you know, cannabis liquids. And it was used to sort of thicken it and make it look more like the true cannabis liquid. And that was what was causing the harm. So it doesn't have to be careful there.

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Hayden McRobbie 49:23

So overall and health risk, I think what I really want to try to communicate here is that I'm not putting numbers in because I don't think we truly know. But if you're a smoker who switches to vaping and completely stopped smoking, then there is going to be a reduction in your health risk. Undoubtedly, how much reduction we're not quite sure, but there will be reduction. If you're a never smoker who becomes a regular vapor, then there's likely to be an increase in health risk. Again, we're just not clear on the health risks of Long term use. But if you're never smoker, best not to start vaping, to delay to discover that there's some health risks associated with that.

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Hayden McRobbie 50:11

Now, various organizations have tried to communicate this to the public. But this is Cancer Research UK, mainly aimed at people who smoke to switch. So you know, that's been most of the focus has been, Hey, Doc, this is much safer than smoking. But I do wonder whether some of the messages have been lost in translation. And understanding relative risk may be the problem less harmful than smoking does not equal safe.

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Hayden McRobbie 50:44

And I know when I've talked to some young people or parents of young people, that

they've heard the message that this is safer than smoking. So it's okay if my child starts vaping, because it's safer than smoking. Yeah, it's only safer than smoking if your child was already smoking, of course. And so this is the this is the challenge, I think, and really trying to communicate risk adequately.

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Hayden McRobbie 51:09

Now, I think that many of you will probably say, yes, we do have a problem with appeal to young people.

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Hayden McRobbie 51:17

But there are some points and questions to consider here. Often, the surveillance data that we report on are a few steps behind, I've already showed you data up until 2019. So we're in 2021, What's changed? The measurements of e cigarette use vary. So we do need to just be a bit careful of what's been reported. Someone that's just tried vaping and has never ever touched it. Again, it's very different from someone who's vaping on a daily basis. And we also need to consider policies and regulations when comparing data from different countries. For example, in the EU, whilst e cigarettes are allowed, it bans, there's legislation to ban advertising restrict sales to minors, and it also limits the nicotine concentration in E cigarettes to 20 milligrams per ml. In New Zealand, we do have legislation in place that does restrict sales to minors does ban advertising, but there's not the same limit on nicotine levels. So that that might be something that will give us some difference between countries. And the other question, too, is are youth who vape those who would have tried smoking. This is a quite a difficult question to answer. But some would say well, you know, often people who vape are sort of the risk takers, and they probably would have tried smoking, I'm not quite sure when that's true in this area.

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Hayden McRobbie 52:51

And early on, I think the vaping industry hasn't been squeaky clean here. And there have been some examples here, which I would say were very much directed at young people. These advertisements don't exist anymore. But there you go. That was certainly the case in the US when JUUL and I talked about JUUL earlier. And there has been quite a problem with young people who don't smoke that have become JUUL users.

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Hayden McRobbie 53:20

And there's a recent research published on this new use of jewel and other pod type devices. So these are the pod devices where you've just been a pod. And users often that

have been like smoking actually, often it's sort of find the first experience to be a bit negative, you know, the harshness of the nicotine is not particularly pleasant. But some do persist with use and reasons for continued use are stress relief and addiction. So you know, they use vaping to help manage stress. A bit like smokers often report smoking to manage stress, really neither a good stress reliever, not a good way to cope with stress. But then once you become dependent or addicted to nicotine, it makes it hard to get out of it. You've got this drive or these urges to vape that will continue with vaping. But there are also some other factors social and environmental, which I think we need to take into account. So peer and parental influences both positive and negative. So parents who set down the rules and say no vaping is not not not something that a nonsmoker should do. This is not not something for us, versus parents who might be a little bit more laid back about it or perhaps think well, it's safer than smoking, it's better off going down that route. lack of support for quitting vaping obviously, if that supports not there then you carry on vaping and the accessibility of the products as well. In terms of environmental factors. What came out of this study was the contrasting messages about long and short term health effects. So perhaps young people are a little bit confused with the messages, and I don't blame them, especially when you're coming from two different angles of helping people stop smoking versus preventing people from starting debate. And then the lack of school vaping policy, no enforcement of that policy, perhaps health education, and cessation resources are lacking as well.

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Hayden McRobbie 55:28

And does policy matter? And I'm talking about government policy or national policies here, or state policies? Yeah, I think it does. And I mentioned the EU tobacco products directive, limiting nicotine concentration. And there's some more data here just out that young vapers in England, we're not only much less likely to report using e cigarettes with nicotine at over 20 milligrams per mil or over 2% compared with Canada, where these products are available. But youth vapers in England were also less likely to report signs of dependence compared to those that are smoking vaping, the high nicotine products were more likely to say they had greater symptoms of dependence, so they were more likely to have urges to vape. So yeah, I think we can really get some good policy in place to help reduce the risk of uptake and young, never smokers.

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Hayden McRobbie 56:33

And I think it's clear that vaping can lead to nicotine dependence, you saw the data at the very beginning of this talk showing that some products, not all, but some. And I think especially the JUUL products can give rise with some practice to quite decent levels of nicotine absorption, very much like smoking. And not only do they become dependent,

but there's an ongoing cost associated with vaping. Of course, if you're dependent and you have to bake, that's going to cost money. And with ongoing vaping. Again, it's the exposure to the other chemicals. And although they're less than smoking, there's still that risk of exposure. And as I said, the risks of long term vaping still are unknown. No, we're a bit over a decade now of regular vaping in people and so far, there haven't been any major concerns that have come to light. But I think we're still too early on in the trajectory, I think to understand the real risks.

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Hayden McRobbie 57:44

So strategies to prevent or reduce the use of vaping in young people? Well, something I think we could all do would be to review our existing school tobacco policies and how we, in most schools don't allow smoking, obviously. But I think you're trying to weave in the vaping here as well would be useful. A lot of school nurses that I'm talking to at the moment are asking for help, you know, what do we do when we've got kids that are dependent on vaping? What do we offer them? Well, I'm afraid there's not a whole lot at the moment, we're only really starting to understand what we could do to help people stop vaping. So I think prevention is still the best part at play here, possibly some more staff training within schools interested to hear what you think about that, to try and get the messages, right. And probably increasing knowledge through some public education campaigns could be helpful.

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Hayden McRobbie 58:39

And look, we've already started and the asthma foundation in New Zealand on the left of the screen there. And that's one of theirs don't get sucked in heavy metal belongs in your ears, not in your lungs. And in the US, they've also got some campaigns to try and prevent uptake of vaping in non smoking youth.

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Hayden McRobbie 59:02

People are starting to look at what could be done to help people stop vaping. This study from the US looked at text messages, sort of a text message intervention to help people quit vaping. At seven months, they had some promising results. But I think we really do need some more evidence here. But, you know, maybe we'll maybe we'll be able to take a little what we know of how we help smokers to quit to help those who vape that want to get off the vaping to do so as well.

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Hayden McRobbie 59:38

So I'll finished here just with some key messages to try and summarize all of this. Whilst e cigarettes are less harmful than smoking, they're unlikely to be harmless, especially with long term use. And I can't reiterate this enough people who don't smoke should not use e cigarettes regardless of the nicotine content to by the way. I know some will say Oh, but it's got no nicotine. And I think the message can just be clear. If you don't smoke you don't vape. And young people who have not smoked and are vaping should be advised to cease e cigarette use and not smoke cigarettes, we don't want to go in that way either. E cigarettes may help people to quit smoking. And so those messages are probably going to still be out there. My view on e cigarette use and helping people quit. Ideally, I think they should also stop vaping when they feel that they won't go back to smoking. I think for all of us getting the different messages to these different groups, right, will have some challenges. But I think with some good policies and regulations in place, it should be possible to find the middle ground on this and keep vaping as an option as a way out of smoking. For those who do smoke, whilst preventing. Or at least if we can't prevent completely, at least substantially limit use in young people who do smoke.

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Hayden McRobbie 1:01:04

So I'll stop my share screen share there and happy to take any questions. I see I've already got some. Do you want me to start going through this list? Or do you want to call them out? And we'll answer them?

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Tara Guckel 1:01:23

Yes. Sounds good. Thank you so much, Hayden, that sounds like there's still so much we need to know in this area as well, we've got a bit more evidence from the past few years, but definitely still got some things to answer. And yeah, I can start going through some of the questions. So just so people know, I've got over 1000 people joining us at the moment. So we'll try our best to get through as many questions as possible. But maybe we'll start with this one. And it's Can you please update us on the way students are engaging in this behavior without teachers and adults being aware?

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Hayden McRobbie 1:01:51

Well, you know, that's, that's not not surprising. They're teenagers engage in lots of behaviors without anyone being aware. And you know vapings, perhaps no different than that they're going to try these things. What their concern is that they go on to vape on a regular basis. And that's what we want to try and avoid. I don't think we can avoid completely them trying stuff.

T Tara Guckel 1:02:23
Then anothone here is do e cigarettes create tar.

H Hayden McRobbie 1:02:28
That's one of the advantages of E cigarettes, they do not create tar. So tar is pretty much the whole is created from burning organic material. And that's what causes the harm. And that's why we know that e cigarettes for people who smoke are less harmful, because they don't contain the tar.

T Tara Guckel 1:02:50
And then you sort of touched on this at the start, you talked about nicotine, but maybe you could tell us some of the harms of nicotine or just go through a few more of those.

H Hayden McRobbie 1:02:57
Yeah, so overall, so nicotine in large doses can be harmful. You can get nicotine toxicity, we have seen that in the past. But generally the first symptoms that you start noticing are nausea and vomiting, if you carried on taking large doses, then that can be more severe outcomes. In very large doses, especially for younger children. You know, it can be fatal. So I'm not saying nictines completely harmless and you want to keep it out of the reach of children. For people who smoke. As I've mentioned, at the beginning, nicotine is perhaps the least of their concerns is the stuff they're addicted to but it's not the stuff that's killing them. In terms of people who don't smoke, and perhaps young people, there have been some concerns put forward in that it might alter brain development in young people. Those data mostly come from animal studies. So it's a little bit difficult to try and translate animal studies to humans. And I think that's the nice easy way of saying well, if you don't smoke don't don't vape.

T Tara Guckel 1:04:10
And then maybe just you could touch on some of the different products. So there's a question here that says is a vape mod different to a disposable vape?

H Hayden McRobbie 1:04:18
All of these different vaping products vary in gosh a whole a whole host of things in terms of some of the mods don't need such high levels of nicotine because they're more efficient

and aerosolized in it. The mods obviously have a bigger battery, typically used by experienced vapers, your pod type devices are typically very easy to use that often and that, you know, nice, easy to use in your hand. Just have a pod which you just pop in the place. So easy to use, but perhaps also some good safety features around it and that you're not handling nicotine as well. The pod devices usually, not always, but often have much higher levels of nicotine and in terms of the salts, but that doesn't necessarily translate into that's how much you absorb when we use them.

T Tara Guckel 1:05:17

And we've got another one here that has vaping been linked to high levels of triggering of epilepsy?

H Hayden McRobbie 1:05:24

I'm not aware of any evidence that shows that vaping has been absolutely linked to causing epilepsy or even seizures. seizures, you can experience seizures with very high, high high levels of nicotine as an overdose. But again, as I mentioned earlier, you're much more more more likely to get some of the nausea and vomiting. I have seen reports of people that have been vaping and that have had seizures. But we can't determine causality of that, based on the reports that we've seen. And remember that all of the trials we've had so far, we haven't seen those events.

T Tara Guckel 1:06:06

And we're getting a few coming questions coming through about passive vaping. So is there any research on passive vaping or the harms from passive vaping? secondhand smoke kind of idea.

H Hayden McRobbie 1:06:16

I'm not aware of a lot of research looking that sort of can confidently show the harms of secondhand vapor? And again, from a sort of risk, proportionate risk approach, any harms of secondhand vapor are less harmful than secondhand smoke. But I don't I can't say with all certainty that that would be harmless. So I think more more evidence there is probably needed to understand that.

T Tara Guckel 1:06:48

sort of another question that might come down to that more evidence, but for non

cigarette smokers who vape what are the health risks of vaping? Beyond becoming addicted to nicotine? Is it mostly related to the unknown risks associated with flavorings?

H Hayden McRobbie 1:07:02

I think flavorings will play a major part. And in rests, what we do know is that and this is these are from animal studies and cell studies is the vapors not harmless. So we know that it can irritate the cells on the respiratory tract or respiratory system and can give rise to some inflammation. Now, the problem we all have concern that we have is what happens over time with constant exposure over many, many years, what will that that cause? I think it's the it's the long term use that is probably going to bring up something will potentially bring up something that's that's concerning.

T Tara Guckel 1:07:46

Watch this space area, I think still. And then we've got one here that says, Is there anything addictive about the ingredients of non nicotine e cigarettes?

H Hayden McRobbie 1:07:58

Um, good question. And I think that I, I can't say that I know of any data to show that any particular flavoring flavorings are addictive in their own in their own right. But we do know that people have a preference of flavoring. And again, if you're trying to stop smoking, having an X a choice of flavors is, is helpful. But we've also seen in the US where they've restricted the flavorings available, especially to young people to try and limit the uptake in New Zealand. The restrictions are that if you buy vaping products at a gas station or a corner store, then you're going to be limited to buying mint, mint, menthol or tobacco flavored so you won't have the full range of products. You'd have to go to an R18 vaping store to get hold of those.

T Tara Guckel 1:09:01

And then there's a bit of a question that touches on Australia's what's what are the policies and regulations of E cigarettes in Australia?

H Hayden McRobbie 1:09:09

Well, Australia, you need a prescription to get nicotine containing e-cigarettes. So there, you know, it's probably one of the most restrictive markets, which is what it is. And no, maybe maybe that will play out as a good or a bad thing in the future. I don't I don't know.

I think we do need to really think about regulation in a really careful way. That leaves that leaves it open for people who smoke to be able to switch but has enough regulation in place to prevent or at least you know, limit the uptake of vaping in young people and maybe the EU have got this right and they've reached the The right point there because we're not seeing a greater proportion of young people becoming regular vapers there. Whether that's because they've had no advertising from very, very early on, or whether that's the limit of nicotine concentration that's done it. I don't have all the answers there. But regulations, or legislation and regulations are really important.

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Tara Guckel 1:10:28

Then with this question, I think we've had a pretty similar one. So what's what's your advice and getting through to these kids that are vaping, my 17 year old son, a non smoker has taken a real liking to regularly using these products. And I think this is a bit of a concern that we have heard from some parents and schools as well.

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Hayden McRobbie 1:10:45

Yeah, and I understand that I'm certainly hearing it from some of the schools here in New Zealand, in some of the school nurses are a little bit stuck with what to do. I think we've got to look at this and look at our messages a little more clearly, I was talking to a 16 year old from one of our local boys high schools, who, in his view, the messages from the government have been very much that vaping is safe. That's what he's heard. That's what his friends have heard. That's not quite the message, the message was safer than smoking from a smokers point of view. But maybe we haven't quite got the messages right. At the other end, for people who don't smoke and trying to prevent it. I don't think no, telling people off or expelling people from school is the way to do this. I think that we should be much more clever in the space and try and work out what messages are needed, talk to young people. And, and try and try and look at some of the other approaches through education through school based policies through teacher education, I think it's probably going to be a mix of all of these things, as opposed to just banning everything from completely.

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Tara Guckel 1:12:03

I think it was a little bit reassuring some of those stats at the start that it is increasing, but there are still quite a small percentage of students who are when you're looking at the large scale, who are actually using e cigarettes and vape products.



Hayden McRobbie 1:12:18

I suspect in the school system knows that you get a different picture when you're there, and you're seeing these kids trying these things. You know, it's we sometimes only see our own worldview. And I think it's about you know, getting together and talking about this, and trying to find that middle ground as we go through.



Tara Guckel 1:12:40

And then there's a question here that says, Is there any information on a cigarette use without nicotine versus with nicotine in Australia? And how are youth getting the vapes



Hayden McRobbie 1:12:53

I didn't quite understand the question about nicotine versus no nicotine, but you can get electronic cigarettes with no nicotine in it, that they are available. My view is it's better to just not vape anything, as I said, it's the rules and policies are going to be easier if you just say we don't vape regardless of nicotine and nicotine content. Where are people getting them? I suspect there's a bit of an online market going it's it's a little bit difficult to enforce sales. I know on many websites, you can just click yes on the over the age of 18. But then that's where that that stops. We know young people are quite creative with how they get these things. And, look, I don't know, maybe some stores are also selling to under age. And I think this is where enforcement really needs know, you've got policy, if you've got legislation in place, then you also need the enforcement arm to make sure that it is adhered to



Tara Guckel 1:13:58

Definitely, sounds like a bit more of a regulation of the online market and also in buying over the counter.



Hayden McRobbie 1:14:03

Yeah, I see someone flashing up saying and yeah, they're not checking IDs, and they're just walking in and getting them. And if that's the case, I think those are the things that we can have influence on, just like we do with with smoking. Now we go and we go down and do enforcement of people selling cigarettes.



Tara Guckel 1:14:24

It's a similar story for alcohol as well, we know that youth can still get alcohol under age. And then another question here is we're hearing anecdotal reports of young adults quitting vaping after finding it is impacting their lung capacity and sporting performance. Is there any evidence around this?

H Hayden McRobbie 1:14:40

There's not a whole lot of evidence and and young people that we know that reduces lung function. There are some data to show that young people that have tried vaping have had respiratory symptoms. But hey, if kids have saying that that's the reason why they're quitting vaping hey? Great? I mean, maybe those are sort of the interventions that we look at that encouraged them to do good, healthy lifestyle changes, like physical activity and one of the, one of the positive side effects about a spot in vaping, then break.

T Tara Guckel 1:15:21

And maybe a bit of a fitting question for those in Australia. There's a question here that says, Is there any data on e cigarette use and COVID, increased rates, etc.

H Hayden McRobbie 1:15:29

In COVID

T Tara Guckel 1:15:31

Yes in the context of COVID.

H Hayden McRobbie 1:15:32

Yeah, I haven't seen data to show an increase in vaping, because of COVID. But again, those data are going to be a little bit coming a little bit later. for Australia, I have seen some data to suggest that smoking increased during COVID. And I think that's the best. The thing we've got to keep in mind out of all of this is that this, this is a continuum of risk. And at one end, you've got, you know, having a healthy lifestyle, not not smoking, not vaping, not using any nicotine products. And at the other end, you've got people who are using the most deadly product that is smoking tobacco, where we have plenty of evidence to show that that causes premature death, illness, loss of function, a whole lot of other things. And that's we've just got to keep that in mind. When we're looking at the whole continuum here.



Tara Guckel 1:16:35

We've had a few questions coming through about batteries exploding it, I think, referring to some of the cases in the US. So there's a question here that says there have been cases of the batteries exploding is this still the case with the generation four pods.



Hayden McRobbie 1:16:47

I think less so with the generation four pods, because there I think a lot of what we saw with exploding devices that were people were tinkering with them and modifying them. And you know, when you start playing around with electrical devices, you're opening yourself up in a great, great risk. Early days, we saw people carrying around the batteries in their pocket with loose change. And then you're getting these battery shorting and sparking and catching fire, and so on and so forth. So I think it's fair to say that as some of the technologies improved, the risks of explosion and other things have, they've got less. But of course, there's a whole range of different electronic cigarettes, you know, some I think, poorly made, some are very, very well made. This is not a, you know, the regulator's consumer products, but we see so many coming in that it's it's always a little bit difficult to generalize.



Tara Guckel 1:17:48

And then this next question, there might be one about, you know, having to wait for more evidence here, but says, Is there much evidence for E cigarettes as a gateway to cigarette smoking for young people or first time smokers?



Hayden McRobbie 1:17:59

Good question. And this is a really difficult one for the evidence to try and tease apart. In general, most studies have showed that young people who have never smoked that tried vaping are more likely to go on to try smoking than young never smokers who never tried vaping. Okay, so, you know, if you're a young person, you try vaping, then you're more likely to go on to try smoking. Now, whether that's because of the gateway, or it's just that these young people that tried vaping are just the ones that would be those that try smoking, it's really difficult to tease apart and look at those other factors that these young people might have. And so you're trying to look, and doing these studies is really, really hard. You could do it if you randomized young people to vape or not, but that's not an ethical study. So you'll see quite a lot of different mixed messages there. around there. I can't absolutely say that that is a gateway effect, because of all these other factors that we can't always measure. But yeah, overall, people who tried vaping are more likely to try

smoking at a later time point.



Tara Guckel 1:19:20

We've had a few questions come through sort of about vaping and mental health. I just read this one out is says. One of the reports young people say to me is that it's the only thing that helps me manage my anxiety. I don't know how much nicotine is in E-cigarettes compared to cigarettes, if potential nicotine withdrawal is being misidentified as anxiety attacks. So just a bit more information on short and long term effects of E cigarettes on mood disorders or mental illnesses.



Hayden McRobbie 1:19:44

Well, that's that's again, another another good question. So one of the tobacco withdrawal symptoms is is depression. And some people also say anxiety and so when you don't smoke you Feel the symptoms and then you smoke, and it takes everything away, which is why people who smoke perceive smoking. To alleviate anxiety and stress, it's quite possible that vaping is happening with a regular vapor when you go without vaping that you feel some of these same symptoms. The data that I know are in smokers who have switched to vaping that say that actually they're getting less of these symptoms if they forgot their vape or had to go without vaping. But in young never smokers that could potentially be a cause. And what you're seeing is that withdrawal symptoms from nicotine. And so therefore, they have to keep vaping to keep these things away. However, I think it's also quite likely that these young people do have some underlying stress and anxiety. And, you know, how do we deal with that, and find better ways to help them cope than picking up either vaping or, or heaven forbid smoking?



Tara Guckel 1:21:03

And this one might not have just a straightforward answer, but it says how much nicotine is in one of the USB style vapes that kids are using?



Hayden McRobbie 1:21:12

It's, it's that is a little bit difficult to answer, because it depends on the on the product, often these small pod like devices have higher concentrations of nicotine. And partly that is because they they need those levels of nicotine to get the in the in the device to get the nicotine into the vapor. For you to absorb nicotine delivery from E cigarettes is not straightforward. It's not like taking a tablet of paracetamol, it's 500 grams, that's what you get. The amount of nicotine you get from your vaping product, not only depends on the

amount of nicotine in the liquid, but also how well that device aerosolized as the nicotine, how well the nicotine is absorbed and from from not just your lungs, but also your respiratory tract. And also flavors and the mix of propylene glycol, vegetable glycerin also might have a role to play, and how much nicotine you get into your blood. So it's, it's not straight. It's not just about looking at what's on the label and going, Oh, that's what you're getting. It's it's not quite as straightforward as that I'm afraid. But yeah, in general, these pod devices typically contain higher concentrations of nicotine than some of your refillable devices. But that's because they kind of need that they deliver the nicotine, that would be satisfying.



Tara Guckel 1:22:46

And you talked about the JUUL devices in your presentation. So there's a question here that says, is the JUUL device used/available in Australia? Or is this a US product?



Hayden McRobbie 1:22:56

It's primarily a US product, although it is now available in the UK, but at a reduced nicotine concentration to comply with the legislation? I'm I would imagine that you would be able to get this in Australia, you can buy it in New Zealand, but it's parallel imported. So it's not directly imported here by the manufacturer. And I think that's the same with Australia. But there are ways around and getting these devices.



Tara Guckel 1:23:28

And we've got a question here about the lungs and it says does prolonged vaping leave plastic deposits in the lungs?



Hayden McRobbie 1:23:35

No, I'm not aware that any vaping device with plastic deposits in the lungs. And look there's there's a lot of the sort of misinformation out there as well, which doesn't help anyone. And no people arrived, you know, vaping is not just breathing water vapor. It's not. But it's also not breathing smoke, which is, you know, the most risky way of getting nicotine. So those sort of things, we need to be really clear on some of our messaging.



Tara Guckel 1:24:08

Definietly, we've still got a few questions coming through around the legalities of vaping. So this one just says to confirm, is it illegal for in Victoria or in Australia to vape in public

as a miner slash adults specifically in a school setting? Or is this more of a school policy type issue?

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Tara Guckel 1:24:23

I can't answer that in the state of Victoria. What I can say is I'm in New Zealand, that it's actually legislated that you can't vape in schools just like you can't smoke in school. So there are specific legislation for that. I don't know whether the state government have actually put them in as if it's in this legislation. And often it needs to change in legislation. So it doesn't necessarily just because you can't smoke in schools doesn't mean that you can't automatically vape the New Zealand had to we had to change our legislation to make that various To separate and separate smoking from vaping. But schools can have policies of course that restrict use of vaping. And many do. And we've got

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Tara Guckel 1:25:12

a question here that says, Is there any particular e cigarette that is more common than others and why?

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Tara Guckel 1:25:20

Again, it depends on on the population that you're that you're looking at. We have seen in the US that these pod devices have been very popular among young people. But they're also popular among some adults, as well.

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Tara Guckel 1:25:38

And maybe just picking up piggybacking off that one, we've got one that's asking sort of about the cost. So you mentioned the financial burden, but maybe if you could just highlight some of the costs that e cigarette products are,

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Tara Guckel 1:25:48

again, these these devices depend on what you're buying and what the product is, there are some that and again, there's the device itself, and then there's the liquid or the pods that you replace, so your most times you're not replacing a whole device, you buy the device, and then add the add the stuff, but in general, vaping would be a third of the cost of smoking. So you can probably work some of that out. But no, they're significantly cheaper than cigarette use, but not cost free, and not not necessarily cheap. I guess, from my experience, some of my patients would probably spend maybe 30 to \$40, New

Zealand dollars at the outset of buying a reasonable vaping product, and then might spend \$10 a week.

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Tara Guckel 1:26:48

And it is getting close to three. So we just have a few more questions. So we've got one here that says which businesses are producing e cigarettes? Is it the big tobacco companies finding a new way to find customers?

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Tara Guckel 1:27:00

Yeah, good. Good question. Yes, some tobacco companies have bought out vaping companies. That is absolutely true. Whether they're seeing it as replacing customers, maybe in the early days, the was quite funny tobacco industry weren't really interested in this. And, in fact, I think many thought that this was just a craze. And you know, most of the vaping companies and manufacturers were completely independent of the tobacco industry. But as time goes on, goes on. And these products become popular, you've seen some tobacco industries, purchase, that companies that make these vaping products, either completely or their own proportion of shares. But on the other hand, there are still a number of independent vaping manufacturers as well. So it's very variable.

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Tara Guckel 1:27:55

And maybe we'll just have this as the last question might be a nice one to end on. And it says, Can you suggest any strategies for schools and parents to help our young people make informed choices regarding vaping?

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Tara Guckel 1:28:07

Great question. And I think this is where, you know, we can use some of the information that we've got. But I think trying to get our messages right, and getting the messages right, will, I think involve talking to some of our young people, to get them to help us to get it right. I think policies at school that are very clear, I don't think they should be punitive. And, of course, expel kids, but there should be some education around, you know, why, why this is not a good thing to do long term. And making sure parents understand that, you know, for people who smoke, yeah, there's a risk reduction if they switch to vaping. So we've got to expect that some people who vape are doing so because they're helping get out of an addiction that's going to kill them into something that's much less harmful. Whilst at the other end of the spectrum, saying actually, if you don't smoke don't don't get into this. Not only is the potential for nicotine dependence, and the cost that goes with

that, you don't want to go down that route, and also the perhaps the unknown health risks that might appear in future.



Tara Guckel 1:29:20

Thank you very much Hayden, and apologies to anyone's questions that we haven't got to we did have over 300 come through. So definitely hard to get through everything. But hopefully, we have covered a range and a few of them were sort of the same question. Just to finish off with just some help services and advice on the screen. So if any of the topics discussed today have been distressing, you can see the information help lines and websites that are available. And thank you again to our audience for joining us today. Please feel free to send us any feedback on the webinar or ideas for future webinars to the info@Positivechoices.org.edu email address. And this presentation and the slides will be available and if you've registered for the webinar, you get sent a link to that one. Once It's available. And you can also keep up to date with Positive Choices via Twitter and Facebook with our handles there on the screen. And thank you again Hayden, your presentation, I really hope that everyone in the audience is able to find it useful. Thank you again, audience as well for joining us. Have a great afternoon, everyone. Thank you. Bye bye.