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CHEMISTRY

Presenter
The first principle of harm reduction is reducing the consumer's exposure to toxicants. We need to know exactly what comes out of a cigarette when it's smoked. That's what we're doing here.

Pete Davis, Analytical Scientist
Chemistry is crucial, for both rigorous measurement of emissions, and analysis of those emissions.

Presenter
So this is how you capture what comes out of a cigarette?

Pete Davis, Analytical Scientist
That's right.

Presenter
And can you use this machine with other products, like electronic cigarettes?

Pete Davis, Analytical Scientist
Yes, we use exactly the same machines for both traditional and next generation products. That way we're able to compare across the entire range accurately.

Presenter
So because the harm to consumers predominantly comes from the smoke, and you get smoke when you burn tobacco, scientists here are researching new types of product that involve no burning at all – such as devices that heat the tobacco, resulting in fewer toxicants.

Stuart Martin, Analytical Scientist
And then there are nicotine products, such as e- cigarettes, that haven't got any tobacco in.

Presenter
Although these are new products and we have yet to see the full results of years of use there is compelling scientific evidence suggesting that e-cigarettes present a substantially lower risk to health than regular cigarettes.

Louise Noone, Analytical Scientist
These are the emissions from a traditional cigarette and these are from an e-cigarette.

Presenter
There's a big difference.

Louise now puts the pads in the flasks, she washes them with a solvent, the solution is then put through this machine, a gas chromatograph.

But why are we doing all of this? Because of the effect on the human body.

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